Claims:

1. A downhole deployment valve, comprising:

a housing having a fluid flow path therethrough;

a valve member operatively connected to the housing for selectively obstructing the flow path; and

a sensor operatively connected to the deployment valve for sensing a wellbore parameter.

2. The apparatus of claim 1, wherein the wellbore parameter is an operating parameter of the deployment valve.

3. The apparatus of claim 1, wherein the wellbore parameter is selected from a group of parameters consisting of: a pressure, a temperature, and a fluid composition.

4. The apparatus of claim 1, wherein the wellbore parameter is a seismic wave.

5. The apparatus of claim 1, further comprising a control member for controlling an operating parameter of the deployment valve.

6. The apparatus of claim 5, wherein the operating parameter is selected from a group of operations consisting of: opening the valve member, closing the valve member, equalizing a pressure, relaying the wellbore parameter.

7. The apparatus of claim 1, wherein the wellbore parameter comprises a signal from a tool in a wellbore.

8. The apparatus of claim 7, wherein the signal represents an operating parameter of the tool.

9. The apparatus of claim 7, wherein the signal is a pressure wave.

10. The apparatus of claim 7, wherein the signal is a seismic pressure wave.

11. The apparatus of claim 1, wherein the sensor is an optical sensor capable of transmitting the wellbore parameter to a surface of a wellbore.

12. The apparatus of claim 11, wherein the wellbore parameter is transmitted through an optical line.

13. The apparatus of claim 1, wherein the wellbore parameter is a seismic acoustic wave transmitted into a formation from a seismic source.

14. The apparatus of claim 13, wherein the seismic source is located within a drill string in a wellbore.

15. The apparatus of claim 13, wherein the seismic source is located at a surface of a wellbore.

16. The apparatus of claim 13, wherein the downhole deployment valve is located within a first wellbore and the seismic source is located within a second wellbore.

17. The apparatus of claim 13, wherein the seismic source is a vibration of a wellbore tool against a wellbore.

18. An apparatus for transferring information between a tool positioned at a first position within a wellbore and a second position, comprising:

a downhole instrumentation sub;

at least one receiver coupled with the downhole instrumentation sub for receiving a first signal from the tool; and

a transmitter coupled with the downhole instrumentation sub for transmitting a second signal to the second position.

19. The apparatus of claim 18, wherein the downhole instrumentation sub comprises a deployment valve.

20. The apparatus of claim 18, wherein the transmitter is a control line.

21. The apparatus of claim 18, wherein the second position is proximate an intersection of the wellbore and a surface of the earth.

22. The apparatus of claim 18, wherein the second position is on a surface of the earth.

23. The apparatus of claim 18, further comprising at least one circuit coupled with the downhole instrumentation sub.

24. The apparatus of claim 18, further comprising a surface monitoring and control unit that receives the second signal.

25. The apparatus of claim 18, wherein the first signal is electromagnetic.

26. The apparatus of claim 18, wherein the tool is a measurement while drilling tool.

27. The apparatus of claim 18, wherein the tool is a pressure while drilling tool.

28. The apparatus of claim 18, wherein the tool is an expansion tool.

29. A downhole tool for use in a wellbore, comprising:

a housing defining a bore formed therein;

a valve disposed within the housing and movable between an open position and a closed position, wherein the closed position substantially seals a first portion of the bore from a second portion of the bore;

one or more sensors coupled with the downhole tool; and

a monitoring and control unit that collects information provided by the one or more sensors.

30. The downhole tool of claim 29, wherein the first portion of the bore communicates with a surface of the wellbore.

31. The downhole tool of claim 29, further comprising a control line connecting the one or more sensors to the monitoring and control unit.

32. The downhole tool of claim 29, wherein the monitoring and control unit controls the valve.

33. The downhole tool of claim 29, wherein the monitoring and control unit monitors a pressure in the first portion of the bore.

34. The downhole tool of claim 29, wherein the monitoring and control unit monitors a pressure in the second portion of the bore.

35. The downhole tool of claim 29, wherein the one or more sensors detect whether the valve is in the open position, the closed position, or a position between the open position and the closed position.

36. The downhole tool of claim 29, wherein the one or more sensors detect a temperature at the downhole tool.

37. The downhole tool of claim 29, wherein the one or more sensors detect a fluid composition at the downhole tool.

38. The downhole tool of claim 29, wherein the one or more sensors detect a presence of a drill string within the downhole tool.

39. The downhole tool of claim 29, further comprising at least one receiver that detects a signal from a transmitting downhole tool.

40. A method for transferring information between a tool positioned at a first position within a wellbore and a second position, comprising:

disposing a downhole instrumentation sub within the wellbore;

receiving a signal from the tool with at least one receiver operatively connected to the downhole instrumentation sub; and

transmitting data from the downhole instrumentation sub to the second position.

41. The method of claim 40, further comprising relaying the signal to a circuit operatively connected to the at least one receiver.

42. The method of claim 40, wherein the second position is a surface of the wellbore.

43. The method of claim 40, wherein the tool is a measurement while drilling tool.

44. The method of claim 40, wherein the tool is a pressure while drilling tool.

45. The method of claim 40, wherein the tool is an expansion tool.

46. The method of claim 45, further comprising controlling an operation of the expansion tool based on the data.

47. The method of claim 45, further comprising:

measuring in real time a fluid pressure within the expansion tool and a fluid pressure around the expansion tool during an installation of an expandable sand screen; and

adjusting the fluid pressure within the expansion tool.

48. A method of operating a downhole deployment valve in a wellbore, comprising:

disposing the downhole deployment valve in the wellbore, the downhole deployment valve defining a bore and having at least one sensor being monitored by a monitoring and control unit;

closing a valve in the downhole deployment valve to substantially seal a first portion of the bore from a second portion of the bore;

measuring a pressure differential between the first portion of the bore and the second portion of the bore with the at least one sensor;

equalizing a pressure differential between the first portion of the bore and the second portion of the bore; and

opening the valve in the downhole deployment valve.

49. The method of claim 48, wherein the first portion of the bore communicates with a surface of the wellbore.

50. The method of claim 48, wherein disposing the downhole deployment valve in the wellbore comprises connecting the downhole deployment valve to the monitoring and control unit with a control line.

51. The method of claim 48, further comprising controlling the valve with the monitoring and control unit.

52. The method of claim 48, further comprising controlling a pressure in the first portion of the bore with the monitoring and control unit.

53. The method of claim 48, further comprising lowering the pressure in the first portion of the bore to substantially atmospheric pressure.

54. The method of claim 54, further comprising inserting a string of tools into the wellbore.

55. The method of claim 48, further comprising determining whether the valve is in an open position, a closed position, or a position between the open position and the closed position with the at least one sensor.

56. The method of claim 48, further comprising determining a temperature at the downhole deployment valve with the at least one sensor.

57. The method of claim 48, further comprising determining a presence of a drill string within the downhole deployment valve with the at least one sensor.

58. The method of claim 48, further comprising relaying from the downhole deployment valve to a surface of the wellbore a signal received from a transmitting downhole tool.

59. A method for communicating with a downhole device below a formation containing an electromagnetic (EM) barrier, comprising:

sending an EM signal from a first position below the EM barrier;

receiving the EM signal at a second position below the EM barrier; and

sending a signal between the second position and a third position above the EM barrier.

60. The method of claim 59, whereby the signal is transmitted from the third position to the first position via the second position.

61. A method for measuring wellbore or formation parameters, comprising:

placing a downhole tool within a wellbore, the downhole tool comprising:

a casing string, at least a portion of the casing string comprising a downhole deployment valve, and

an optical sensor disposed on the casing string; and

lowering a drill string into the wellbore while sensing wellbore or formation parameters with the optical sensor.

62. The method of claim 61, further comprising adjusting a trajectory of the drill string while lowering the drill string into the wellbore.

63. The method of claim 61, further comprising adjusting a composition or amount of drilling fluid while lowering the drill string into the wellbore.

64. The method of claim 61, wherein sensing wellbore or formation parameters with the optical sensor comprises receiving at least one acoustic wave transmitted into a formation from a seismic source.

65. The method of claim 64, wherein the seismic source transmits the at least one acoustic wave from the drill string to the optical sensor.

66. The method of claim 64, wherein the seismic source transmits the at least one acoustic wave from a surface of the wellbore to the optical sensor.

67. The method of claim 64, wherein the seismic source transmits the at least one acoustic wave from an adjacent wellbore to the optical sensor.

68. The method of claim 64, wherein the seismic source transmits the at least one acoustic wave from the drill string vibrating against the wellbore to the optical sensor.

69. The method of claim 61, further comprising selectively obstructing a fluid flow path within the casing string with the downhole deployment valve while lowering the drill string.

70. An apparatus for monitoring conditions within a wellbore or a formation, comprising:

a casing string, at least a portion of the casing string comprising a downhole deployment valve for selectively obstructing a fluid path through the casing string; and

at least one optical sensor disposed on the casing string for sensing one or more parameters within the wellbore or formation.

71. The apparatus of claim 70, wherein the at least one optical sensor comprises at least one of a seismic sensor, acoustic sensor, pressure sensor, or temperature sensor.

72. The apparatus of claim 70, further comprising a seismic source for transmitting at least one acoustic wave into the formation for sensing by the optical sensor.

73. The apparatus of claim 72, wherein the seismic source is disposed within a drill string within the casing string.

74. The apparatus of claim 72, wherein the seismic source is disposed at a surface of a wellbore.

75. The apparatus of claim 72, wherein the seismic source is disposed in an adjacent wellbore.

76. The apparatus of claim 72, wherein the seismic source is vibration of a drill string within the casing string.

77. The apparatus of claim 70, further comprising additional optical sensors disposed on the outside of the casing string and in communication with an optical line for monitoring conditions at different locations within the wellbore or formation.

78. The apparatus of claim 70, further comprising a control line substantially parallel to the optical line connecting the surface monitoring and control unit to the downhole deployment valve.

79. The apparatus of claim 78, wherein at least a portion of the control line and the optical line are protected by at least one housing disposed around the casing string.

80. The apparatus of claim 70, wherein the casing string further comprises a flow meter having one or more optical sensors thereon for measuring at least one of a flow rate of a fluid flow through the casing string or a composition of the fluid.

81. A method for permanently monitoring at least one wellbore or formation parameter, comprising:

placing a casing string within a wellbore, at least a portion of the casing string comprising a downhole deployment valve with at least one optical sensor disposed therein; and

sensing at least one wellbore or formation parameter with the optical sensor.

82. The method of claim 81, wherein a seismic source transmits at least one acoustic wave into the formation for sensing by the at least one optical sensor.

83. The method of claim 82, wherein the seismic source is disposed at a surface of the wellbore.

84. The method of claim 83, wherein the seismic source is moved to at least two locations at the surface to transmit a plurality of acoustic waves into the formation.

85. The method of claim 81, wherein the at least one wellbore or formation parameter comprises microseismic measurements.

86. The method of claim 81, wherein the at least one optical sensor comprises at least one of a seismic sensor, pressure sensor, temperature sensor, or acoustic sensor.

87. The method of claim 81, wherein the casing string further comprises a flow meter and wherein the flow meter senses at least one of a flow rate of fluid or a composition of the fluid.

88. A method for determining flow characteristics of a fluid flowing through a casing string, comprising:

providing a casing string within a wellbore comprising a downhole deployment valve and at least one optical sensor coupled thereto;

measuring characteristics of fluid flowing through the casing string using the at least one optical sensor; and

determining at least one of a volumetric phase fraction for the fluid or flow rate for the fluid based on the measured fluid characteristics.

89. The method of claim 88, wherein the fluid is introduced while drilling into a formation.

90. The method of claim 89, further comprising adjusting the flow rate of the fluid while drilling into the formation.

91. The method of claim 89, further comprising using at least one of the volumetric phase fraction or the flow rate to determine formation properties while drilling into the formation.

92. An apparatus for determining flow characteristics of a fluid flowing through a casing string in a wellbore, comprising:

a casing string comprising a downhole deployment valve; and

at least one optical sensor coupled to the casing string for sensing at least one of a volumetric phase fraction of the fluid or a flow rate of the fluid through the casing string.

93. The apparatus of claim 92, wherein the fluid comprises drilling fluid introduced into the casing string while drilling into a formation.

94. The apparatus of claim 92, wherein the casing string further comprises one or more optical sensors attached thereto for sensing detecting the position of the downhole deployment valve.